

FROM

(TUE) 8.19'03 13:58/ST. 13:56/NO. 4662845428 P 3

The embodiments of the invention for which as exclusive privilege and property right is claimed are defined as follows:

1. A handheld, portable color measuring device for measuring three different colors in a color target to be analyzed, the color measuring device comprising:

a color measuring probe housing;

a hollow probe tip attached to one end of said probe housing, said probe tip adapted for placing next to the color target to be measured;

a white light source mounted inside the probe housing and connected to a power source;

a color measurement switch mounted on said probe housing and connected to said power source and connected to said light source, when said measurement switch is actuated said light source illuminating the color target surrounded by an end of said probe tip;

means for capturing a reflected light signal off the color target when the color target is illuminated, said means for capturing disposed inside said probe housing;

a multiple sensor mounted inside said probe housing, said 3 color sensor receiving the reflected light signal from said means for capturing;

a microprocessor mounted in said probe housing and connected to said power source and said 3 color sensor, said microprocessor for processing the reflected light signal; and

display means connected to said microprocessor, said display means for displaying the reflected light signal in percentages of the 3 different colors.

FROM

(TUE) 8.19'03 13:58/ST. 13:56/NO. 4362845428 P 4

2. The color measuring device as described in claim 1 wherein said display means is a built-in LCD display mounted in said probe housing.

drop → 3. The color measuring device as described in claim 1 wherein said display means is a personal computer electrically connected to said microprocessor.

4. The color measuring device as described in claim 1 wherein said light source is a white LED light source.

5. The color measuring device as described in claim 1 wherein said power source is a battery mounted inside said probe housing.

6. The color measuring device as described in claim 1 wherein said means for capturing is a light pipe centered inside said probe housing.

7. A handheld, portable color measuring device for measuring the primary colors of red, green and blue in a color target to be analyzed, the color measuring device comprising:

an elongated color measuring probe housing;

a hollow cone shaped probe tip attached to one end of the probe housing, said probe tip having a target contact end adapted for placing against the color target to be measured;

a white light source mounted inside the probe housing connected to a battery power source;

FROM

(TUE) 8:19'03 13:58/ST. 13:56/NO. 4862845428 P 5

a color measurement switch connected to said battery power source and connected to said white light source, said white light source for illuminating the color target surrounded by the target contact end of said probe tip;

a light pipe centered inside said probe housing and inside a portion of said probe tip, said light pipe capturing a reflected light signal off the color target;

a 3 color (RGB) sensor connected to said battery power source and mounted inside said probe housing, said 3 color sensor receiving the reflected light received through said light pipe;

a microprocessor connected to said battery power source and mounted in said probe housing, said microprocessor connected to said 3 color sensor for processing the reflected light signal; and

display means connected to said microprocessor, said display means for displaying the reflected light signal in percentages of red, green and blue.

8. The color measuring device as described in claim 7 wherein said display means is a built-in LCD display mounted in an opposite end of said probe housing, said microprocessor having memory with a coded list of colors with percentages of each primary color found in each color for providing a closest color match display when displaying the reflected light signal in percentages of red, green and blue on the LCD display.

FROM

(TUE) 8.19' 03 13:58/ST. 13:56/NO. 4862845428 P 6

~~O.K.~~ 9. The color measuring device as described in claim 7 wherein said display means is a personal computer electrically connected to said microprocessor, said personal computer having a coded list of colors with percentages of each primary color found therein for providing a closest color match display when displaying the reflected light signal in percentages of red, green and blue.

10. The color measuring device as described in claim 7 wherein said light source is a white LED light source.

11. The color measuring device as described in claim 7 wherein said power source is a 6 volt battery mounted inside said probe housing.

12. A method for measuring at least three colors in a color target using a color measuring device, the color measuring device having a color measuring probe housing with a hollow probe tip adapted for placing next to the color target to be measured, a light source mounted inside the probe housing connected to a power source, a 3 color sensor connected to the power source and mounted inside the probe housing, a microprocessor with memory connected to the power source and a display screen connected to the power source, the steps comprising:

- illuminating the color target next to the probe tip with the light source;
- capturing a reflected light signal off the color target inside the probe housing;
- measuring the reflected light signal on the 3 color sensor;
- processing the 3 color sensor measurement using the microprocessor; and
- displaying percentages of the 3 colors from the color target on the display screen.

FROM

(TUE) 8.19'03 13:58/ST. 13:56/NO. 4862845428 P 7

13. The method as described in claim 12 wherein the step of capturing the reflected light signal includes capturing the reflected light signal inside a light pipe received inside the probe housing and next to the 3 color sensor.

14. The method as described in claim 12 wherein the step of displaying percentages of the 3 colors includes displaying percentages of red green and blue found in the color target.

15. The method as described in claim 12 wherein the step of displaying percentages of the 3 colors includes displaying the percentages of the 3 colors on a built-in LCD display mounted on the probe housing.

16. The method as described in claim 15 further including the steps of storing in the memory of the microprocessor a coded list of various shades of colors with percentages of 3 different colors found therein and displaying on the LCD display a closest color match when compared to the percentages of the 3 colors from the color target.

✱ 17. The method as described in claim 12 wherein the step of displaying percentages of the 3 colors includes displaying the percentages of the 3 colors on a display screen of a personal computer electrically connected to the microprocessor.

FROM

(TUE) 8.19'03 13:58/ST. 13:56/NO. 4862845428 P 8

18. The method as described in claim 17 further including the steps of storing in memory of the personal computer a coded list of various shades of colors with percentages of 3 different colors found therein and displaying on the display screen of the personal computer a closest color match when compared to the percentages of the 3 colors from the color target.

19. The method as described in claim 12 wherein the light source is a white LED light source.

20. The method as described in claim 12 wherein the power source is a battery power source received in the probe housing.